

AFFORDANCE OF ENGLISH-MEDIUM INSTRUCTION CONTEXTS IN TAIWAN

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ABSTRACT

The proliferation of English-medium instruction (EMI) in nonnative English-speaking (NNES) contexts has compelled researchers to explore the challenges students face in such environments. Mostly quantitative in nature with foci on language-related difficulties in one type of institution or curriculum, these studies obscure the complexity of NNES students' learning of content via English. Through the lens of *affordance* in van Lier's (2000, 2004a, 2004b, 2007, 2008b) ecology of language education, this qualitative case study examines learning opportunities afforded by two types of EMI contexts in Taiwan: selective EMI courses and an immersion program. Findings showed that despite the limited attention to cultural affordance, more content and language affordances were cognized and acted on in the design where students displayed more interest in subjects, instructors held higher expectations, and flexibility in selection of courses was allowed. As such, this paper underscores the primacy of interests, educational levels, and background knowledge in individual factors; the provision of sufficient English and cultural affordances in contextual factors; and the dynamics between the two in students' learning of content via English.

Key Words: internationalization of higher education, English-medium instruction, affordance, learner agency

INTRODUCTION

In recent years, higher education institutes worldwide have endeavored to "internationalize" their campuses and curricula due to the marketization of higher education (de Wit, 2002; Healey, 2008). Because it is a common language for scientific, academic, and business communication, English has been used as the medium of instruction to enhance local students' linguistic abilities and recruit international

students, thereby bringing economic benefits, diversity, and cross-cultural understanding to host communities. The higher education institutes in Taiwan have undergone these same changes in foreign language focus and diversified student populations. According to the Ministry of Education (2009, 2010) in Taiwan, the number of English-medium instruction (EMI) courses has tripled from the academic years of 2003 to 2006, and the number of international students has doubled from the academic years of 2006 to 2010.

Despite the possible benefits of using EMI, nonnative English-speaking (NNES) students' learning path is often portrayed as an arduous process with a variety of challenges. Research has indicated various factors, including both teachers' and students' language proficiency, teachers' pedagogical knowledge and skills, students' prior language experiences and learning habits, the nature of the subject matter, and the availability of assistance, all determine the success of NNES students' EMI experiences (Bruna, Vann, & Escudero, 2007; Chang, 2010; Evans & Morrison, 2011a, 2011b; Hellekjær, 2009; Huang, 2009, 2012; Kırkgöz, 2009; Sert, 2008; Wu, 2006). In particular, these students encounter language barriers while acculturating to university settings where English is treated not as a subject but as a communication means (Evans & Morrison, 2011a, 2011b; Kırkgöz 2009; Naoko & Naeko, 2006). In such arenas, students' universal complaints include their lack of a rich general and technical vocabulary and their inability to grasp academic genres/norms, which thereby impede their comprehension of lectures and texts as well as their accuracy in oral presentations and written assignments. Such language difficulties, also influenced by a combination of affective, cultural, and/or contextual adversity, have restricted students' language-use opportunities (Byun et al., 2011; Dalton-Puffer, 2007; Wu, 2006). As such, NNES students often express their dissatisfaction with their English abilities (Byun et al., 2011) and/or content learning outcomes after participating in EMI (Huang, 2009, 2012; Sert, 2008).

Although previous research has shed light on different challenges NNES students face, most of these studies are quantitative in nature with foci on language-related difficulties in one type of institution or curricula, and thus the complexity of NNES students' learning of content in English is obscured. First, most analyses adopting quantitative methods have failed to consider students' capabilities to mediate their own learning, i.e., learner agency; that is, different individuals may perceive,

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interpret and act on learning opportunities differently. Through the lens of affordance that highlights learner agency in van Lier's (2000, 2004a, 2004b, 2007, 2008b) ecology of language education, this study attempts to illustrate the primacy of individual factors, contextual factors, and the dynamics between the two in students' learning content via English. Such insights from an ecological perspective have been popular in examining how technology may afford learning opportunities (see Hafner & Candlin, 2007, for corpus tools; Zheng, Young, Wanger, & Brewer, 2009, for virtual learning), but they have not yet informed research on EMI studies in higher education. Second, studies examining NNES students' learning experiences in Asia are often set within one type of institution or curriculum design (Byun et al., 2011; Evan & Morrison, 2011a, 2011b). Learners' attempts to mediate content learning in different types of EMI have been neglected because of this homogeneous setting. Conducting a comprehensive survey of Italian universities, Costa and Coleman (2012) paint a heterogeneous picture of English-taught programs where private universities tend to implement EMI rigorously, while public ones focus on improving EMI pedagogy. Though showing institutional and curricular differences, such studies have focused simply on the implementation of EMI policies; however, this study takes a step forward to examine how NNES students' content learning may inform and be informed by different university and curriculum types.

Given the primacy of learner agency, this paper attempts to explore how the learning opportunities afforded by two types of EMI contexts are perceived and acted on by undergraduate students in Taiwan using van Lier's (2000, 2004a, 2004b, 2007, 2008b) notion of affordance as the theoretical lens. The adoption of qualitative research methodology distinguishes between these two types of EMI contexts rather than to control variables for systemic comparisons.

THEORETICAL FRAMEWORK

The theoretical framework of this paper draws on van Lier's (2000, 2004a, 2004b, 2007, 2008b) notion of affordance in his ecology of language education. Extending the sociocultural theory of learning as contextualized or socially mediated practices (Lantolf, 2000, 2006; Vygotsky, 1978), van Lier adopts a holistic approach to language education by emphasizing (language) learners as active perceiving

agents who can use their multiple senses to note and identify how particular properties in the environment are related to them and hence provide them with possible further activities. In doing so, the ecological perspective highlights the significance of the relations between the learner and the environment, paying special attention to the quality of learning processes, emphasizing the ability of active exploration in the learner, and prizing the variability and diversity in the learner and the environment.

One of the central concepts to the ecological perspective is affordance, which was first defined by Gibson (1979) as “what [the environment] *offers* the animal, what it *provides* or *furnishes*, either for good or ill” (*italics* in the original, p. 127) and later developed by van Lier (2004a) as “a relationship between an organism [a learner, in our case] and the environment, that signals an opportunity for or inhibition of action” (p. 4). The emergence of affordance demands action, two-way perception and interpretation on the part of the active learner. When engaging in activities, learners perceive the learning moments in a bi-directional manner directed to themselves and the environment; that is, they, on the basis of their understandings of themselves, viz., knowledge of what they want, need and are able to do, discern, pick up and interpret the possible learning opportunities brought forth by the activities. These three preconditions for the emergence of affordance mutually reinforce each other in a continuous manner as illustrated in the following figure.

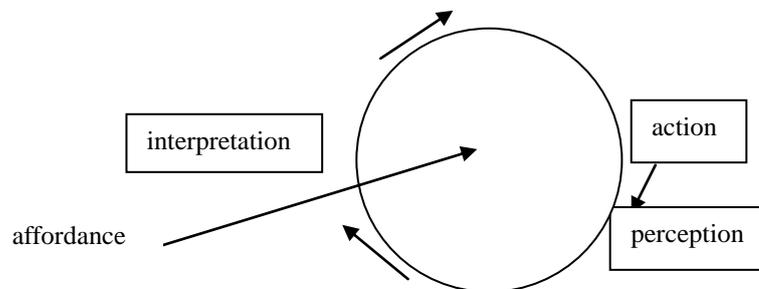


Figure 1. Affordance (from van Lier 2004a, p. 92)

Perceiving and acting upon affordances presupposes and capitalizes learner agency, which is not simply viewed as individuals’ control over behavior or possession of traits but more importantly as “the ability to assign relevance and significance to things and events” (Lantolf & Thorne, 2006, p. 143) or “*action potential*, mediated by social,

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interactional, cultural, institutional and other contextual factors” (*italics* in the original, van Lier, 2008a, p. 171). Agency is proposed as a continuum, not a dichotomy, determined by the extent to which individuals take initiative, recognize their learning responsibilities and consequences, mediate, and are mediated by, socio-cultural contexts (van Lier, 2008a). Nurturing learner agency “starts out with the activities, needs, and emergent purposes of the learner” (van Lier, 2007, p. 53), proceeds to make resources available in the environment, guides the learner’s perception-in-action to obtain his or her goals, and finally requires the learner to take over the activity or task.

The notion of perception, according to van Lier (2004b), is different from the concept of noticing the function of input or output, which has been theorized as a necessary condition for second language acquisition (SLA) through controlled, quantitative studies of cognition (Chen, 2013, 2014; Izumi & Bigelow, 2000; Schmidt, 1990, 2001, 2010). As he argues, “perception goes far beyond noticing linguistic features (phonology, morphology, rule-governed syntax), and therefore SLA research on noticing and focusing on form misses a number of crucial aspects of perceptual work” (p. 91). Despite its significance, language noticing has been criticized for overemphasizing a perceiver or a learner as “a static observer of a picture” rather than “an active explorer of information” (p. 87). The emphasis should not be put on the perception of a form in the input or output but more importantly on the recognition of the *interaction* between the individual and the environment through participation in activities. Such dynamics are often unrecognized in quasi-experimental studies of noticing. In this respect, unlike Schmidt’s (1990, 2001, 2010) noticing hypothesis, van Lier (2004b) emphasizes the importance of awareness in incidental learning and intentionality in intentional learning. Affordance making thus differs from language noticing for the former emphasizes the holistic dynamics of the self and the environment, while the latter underscores the importance of cognitive processing of language.

Developed on the basis of the conceptual framework of the ecology of language learning, the research questions that guide our study include:

1. What types of affordances do students in these two types of EMI contexts perceive and pick up? In what ways?
2. What factors might inform the types of affordances perceived and picked up by the students? In what ways?

METHOD

Participants and Contexts

This paper presents data from a larger qualitative case study examining NNES content instructors' and students' experiences and viewpoints of EMI in the northern part of Taiwan¹. Data reported in this paper are drawn from two popular types of EMI contexts in Taiwan, i.e., selective EMI courses and an immersion design. In the first approach, content courses are added to existing programs, and students can voluntarily choose which EMI courses to take (Public University A and B). The second approach—an immersion program—offers all content courses in English in order to increase local students' English proficiency and hence facilitate students' study abroad (Private University C). Regardless of the curriculum approach, all of these courses are designed to increase students' English proficiency, facilitate student mobility, and recruit international students.

Eleven students from two instructor participants' (Prof. Lin and Prof. Su) classes situated in the above English-taught programs were recruited based on students' willingness to participate in the study and their ability to express their opinions in either English or Chinese. All of the students are Taiwanese, except Victoria who is from Guatemala. Six students were recruited from Prof. Lin's Politics courses in Universities A and B (three respectively from courses A and B), while five students were recruited from Prof. Su's Introduction to Statistics course in University C (course C). Those in Prof. Lin's course were all non-freshmen. Among them, only Claire perceived her English good, with Ken and Vicky self-identifying as weak at writing and Juhziz poor at speaking. Unlike the students in Prof. Lin's course, all of Prof. Su's students were freshmen. Among them, only Victoria, the international student, said she felt confident in her English skills, and many stated they were weak at listening and speaking (Lisa and Fanny) or writing (Fanny and Steffi).

¹ This study was supported by the Ministry of Science and Technology (99-2410-H-004-183-MY2). Parts of data were also used in Huang (2014a, 2014b, 2014, forthcoming). Despite using similar data sets, each paper has different focuses: this paper explores students' affordance-perception, Huang (2014a) examines EMI instructors' pedagogy, Huang (2014b) illustrates the usefulness of Activity Theory in designing EMI, and Huang (2014, forthcoming) investigates functions of EMI instructors' beliefs.

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Table 1 illustrates the demographic information of the eleven student participants.

Note that the courses taught by the two instructor participants were used for illumination; we do not assume that the ways these instructors teach are the only teaching styles present in these two types of EMI contexts.

Table 1

Demographic Information of Student Participants

Design	School	Name	Gender	Major	Year in university	Length of English learning (year)	Purposes of adopting EMI
Selective courses	University A	Ken	M	Politics	Senior	16	international
		Juhziz	M	Politics	Senior	12	
		Vicky	F	European languages & cultures	Junior	16	
	University B	Claire	F	Politics	Senior	18	Recruit students
		Stacey	F	Politics	Junior	15	
		Mag	F	Public Health	Sophomore	14	
Immersion	University C	Lisa	F	Politics	Freshman	11	Increase local students' English proficiency for study abroad
		Dan	M			14	
		Fanny	F			11	
		Steffi	F			15	
		Victoria	F			13	

Data Collection and Analysis

Various forms of data, including classroom observations and semi-structured interviews, were collected in the 2010-2011 and 2011-2012 academic years. Monthly classroom observations of the three classes were conducted to help researchers gain a general understanding of how the instructors designed and taught a course and how the student participants engaged in the in-class learning activities. Two semi-structured individual interviews exploring students' EMI learning

experiences and their perspectives on the design and enactment of EMI were conducted with most of the students. All interviews were conducted in Chinese, except for the interviews with Victoria, which were conducted in English because of her limited Chinese proficiency.

For this paper, students' interview data are used as primary data with observation data as supplementary since most of the class interaction was limited and the focus is on students' perceptions. Data were initially analyzed based on Charmaz's (2006) grounded theory and Carspecken's (1996) levels of inference. Among the initial codes, salient codes occurring frequently were selected to establish categories through which themes and patterns were extracted and clustered to make cross-participant comparisons. Connections were, then, made among categories, themes, and the conceptual framework, i.e., van Lier's (2000, 2004a, 2004b, 2007, 2008b) notion of affordance.

Based on the learners' goals and the ways affordances are utilized, the affordances the student participants adopted were classified as (a) content, language, and cultural affordances and (b) teacher-guided and learner-initiated affordances respectively. Content affordances refer to what learners perceive in their socio-educational contexts that may provide them with opportunities to enhance their content learning (i.e., comprehension of content knowledge and synthetic or critical thinking about the content); language affordances are environmental factors that learners detect and use for advancing their English learning (i.e., ranging from the improvement specifically in oral expression, listening or reading comprehension, or more generally to overall English abilities and skills); and cultural affordances are defined as the opportunities students perceive and utilize to increase their cross-cultural awareness and sensitivity. Teacher-guided affordances refer to students' perception and initiation of action with the resources or scaffolds accessible in the in-class activities arranged by the instructors, while student-initiated affordances refer to students' perception and initiation of self-regulated activities with the resources or scaffolds deemed significant but unavailable in the teacher-guided activities.

RESULTS AND DISCUSSION

In learning discipline-specific content in English, the student participants perceived and drew on affordances available in the two types of EMI contexts in their own unique ways based on a multitude of

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individual and contextual factors as well as the interaction of the two. This section will describe each EMI context before illustrating the learning opportunities students recognized and acted on.

Learning Experiences in Selective EMI Courses

*Curriculum profile*²

Politics courses (courses A and B), offered respectively in the Department of Politics at two public universities (Universities A and B), were representatives of the EMI context in which only selective content courses primarily for international students were taught in English. Students could voluntarily enroll in these selective courses, which, according to Prof. Lin, present an internationalized learning environment conducive to students' learning of content in English from cross-cultural perspectives by attracting local students with good English proficiency and/or interests in regional politics and international students whose presence in itself affords the use of English as a lingua franca and diverse cultural perspectives.

Although these two public universities in Taiwan, like those in Costa and Coleman's (2012) study, did not strictly enforce the English-only policy, Prof. Lin relied primarily on English in class. On occasion, he would code-switch across different languages (e.g., Korean, Japanese, Cantonese, and Mandarin) to address students' linguistic needs and/or elicit culturally responsive examples. In our observations, students used English productively and receptively, orally and in writing to pose questions and express their ideas. Despite the use of EMI, Prof. Lin's teaching focused on the content rather than the language, which was usually addressed in incidental teaching or corrective feedback.

In both courses, Prof. Lin adopted interactive lectures, i.e., teacher-led lectures mixed with student- and/or teacher-initiated questions, illustrations, and explanations to engage students in critical thinking about key concepts to increase their understanding of, and interests in, Third World politics. With these goals in mind, he lectured based on Power Point slides with questions and illustrative examples, stories, and jokes. The use of stories, maps, examples, and questions, as well as the provision of opportunities for discussions may also be

² This paper focuses on students' affordance perceptions. If readers are interested in instructors' pedagogy, please refer to Huang (2014a).

influenced by the nature of subject matter as politics is argumentative in nature. Since many students were not familiar with the Third World countries, when Prof. Lin referred to particular areas, he would direct students' attention to the maps. In addition to interactive lectures, Prof. Lin would occasionally arrange for students to engage in alternative learning activities, such as listening to speeches from guest speakers, watching movies, and attending conferences. In so doing, he hoped to better facilitate students' understanding of regional politics and acculturate them into the politics community.

More background knowledge, more language and content affordances

All of the student participants were pleased with their learning in Prof. Lin's course. Yet not all of them recognized the learning opportunities presented by the EMI context in the same way. In particular, seniors majoring in politics like Claire, Ken, and Juhziz reported to have few or no comprehension problems in reading textbooks or listening to Prof. Lin's lectures and identifying content and language affordances available in the EMI context. In contrast, Stacey, Mag, and Vicky, who were a junior politics major and non-politics majors, respectively, reported problems in comprehension. They seemed to have difficulties detecting language affordances available in the classroom.

The senior politics majors thought that learning regional politics in English provided them with more content affordances than language ones. Such perceptions may be due to their understanding of the school-level focus on EMI for international, not local, students and the classroom-level focus on content, not English, learning. Situated in such a context, the students also placed their primary objective on content learning, with language learning as a secondary objective. As Claire put it, "I'm not here to learn vocabulary such as 'political independence'.... I'm here to learn about how it [xxx government] functions." Such results complicate the previous literature that reported most students took EMI courses because of their wish to learn English (Huang, 2009; Hudson, 2009; Paseka, 2000).

The content affordances the senior politics majors perceived could promote better understanding of content. These students viewed Prof. Lin's use of maps for illustration and the jokes and stories interwoven in lectures as content affordances to facilitate their comprehension and memorization of certain critical concepts. For example, Claire explained how Prof. Lin's illustration with maps and requirements for students to

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memorize the maps facilitated her content learning:

If he's [Fang-Yu] talking about a particular country [in Africa], and we're not that familiar with its location in the continent and its surrounding countries. But, with the map, we can completely understand.... It makes it easier for us to connect those contributory factors [to particular historical events].... It [the map] provides a geographical framework for meaning.

Aside from enhancing comprehension, the senior students also pointed out that Prof. Lin encouraged student thinking and opinion sharing via questioning (see Huang, 2014a). Specifically, by answering open and referential questions that elicited responses without any clear right/wrong answers, students had to "think thoroughly" and "more holistically." In reflecting on how the open-ended questions Prof. Lin posed benefited her learning of content knowledge, Claire expressed, "It [answering the open-ended questions] helps you with thinking, especially thinking in English.... And you would think about the issues from different perspectives...because sometimes the teacher would respond with another perspective." Since these questions, as indicated in Kong and Hoare's (2011) study, require students to think critically about a subject, thereby increasing their cognitive content engagement, it is not surprising that these questions are perceived to possess potential to cultivate students' abilities to synthesize, analyze, and critically think about the discipline-specific content.

Unlike all other participants in this study, the three senior politics majors perceived the potential to advance not only their content learning but also English learning. Different from the perceived improvement in the receptive skills reported in previous literature (Chang, 2010; Evans & Morrison, 2011b; Sert, 2008; Wu, 2006), these students affirmed the value of "the opportunities [that the teacher offered] to express their ideas in English." As Ken explained:

Sometimes we would avoid doing something we're not that familiar with...because you're not good at it and you're afraid of embarrassing yourself in public. But the instructor would require you to do so [expressing your ideas in English in class] and offer you opportunities to do so. You have to follow the rules, so you speak, and after a while, you start to get used to it.

As seen in van Lier's (2000, 2004a, 2004b, 2007, 2008a, 2008b) and many other scholars' emphasis on the significance of engagement in enabling L2 learners to develop their voices, these students perceived and engaged in opportunities to pose questions and express opinions in English (see Huang, 2014a). Some students may have even transformed their previous identities as deficient L2 learners with an emphasis on accuracy and nurtured new identities as communicators. As Claire said, "I used to demand accuracy and perfection in speaking, but then I found that it [English] was only a tool for communication." She added how she developed some sort of "courage that supported her to try without fear." Indeed, the dynamics between students' self-knowledge and their perceptions of the availability of the learning opportunities further influence students' action and satisfaction with EMI experiences.

Despite the recognition of language affordances, not all the politics majors perceived or used these opportunities in a similar fashion. For students who self-identified as weak in English, like Juhziz, language affordances were accessible not just in the opportunities given to speak in English but also in the prompts and/or recasts provided by both the instructor and more capable peers. As Juhziz said, "The instructor would guess what we're trying to say, and say one or two sentences as a prompt, asking whether it's what we meant." With the language support offered by the teacher to encourage and assist students who struggled with oral expression in English, Juhziz said he could see signs of confidence growing inside him. Juhziz detected language affordances not just in the instructor but also in his more English-proficient peers. Perceiving the difficulties he encountered in answering short essay questions in English, Juhziz initiated questions to his peers to learn "how to answer short essay questions" and "how to answer in a better way" so as to improve his English writing skills on the one hand and obtain higher scores on assignments on the other. These findings suggest that affordance perception or use may not relate to English proficiency but one's ability to relate the value of the environment to oneself.

While these senior politics majors could detect the affordances of content and language learning, their peers, Stacey, Mag, and Vicky, recognized few language learning opportunities. Even if they perceived the same properties in the classroom as affordances, they drew on them in different ways than their senior peers. For example, as the senior majors perceived posing questions to the instructor as an affordance that presented them with opportunities both for comprehension and critical

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thinking, Stacey, Mag, and Vicky could only act on the affordance to promote comprehension. These differences might be explained by the varying amount of background knowledge that these two types of students possessed rather than their English proficiency, the factor receiving the most attention in previous literature (Chang, 2010; Evans & Morrison, 2011a, 2011b; Huang, 2012; Sert, 2008; Wu, 2006). These findings suggest that in addition to the emphasis on learners' prior EMI experiences or English vocabulary as has been reported in the previous literature (Evans & Morrison, 2011a, 2011b; Huang, 2012), attention should also be given to students' prior subject-matter learning experiences.

More interest in content, more learner-initiated affordances

As the student participants with more background knowledge tended to perceive both content and language affordances, those with more interest in subject matter tended to take the teacher-initiated affordances a step further to initiate their own learning activities. Students, like Claire, Juhziz, Vicky, and Ken, who took the courses because of their interest in the topics could generally perceive and act on both teacher-guided and learner-initiated affordances. They not only detected and engaged in teacher-arranged resources and activities as content and language affordances, but they also initiated other learning activities to advance their learning of discipline-specific content and detect the affordances within them. In the classroom, they took initiative posing various types of questions in English to ensure and even extend their learning of regional politics, including comprehension checks, comparison, and opinion questions (see Huang, 2014a). With a hope to deepen and broaden her content learning, Claire said she would pose comparison questions to Prof. Lin in class, to which Prof. Lin would usually respond by asking questions to elicit students' current understanding before providing follow-up questions and learner-tailored explanations:

Sometimes the instructor would [respond to my questions] in the form of questions. He would ask me, "Then, how do you think they are different?" and I would say maybe "blah, blah, blah." He would then say, "Well, you're right in some parts, but not so much in some others," and he would then tell me the answers. He wouldn't answer you right away.... I think by doing so he could encourage me to think more deeply or to think from a different perspective.

Indeed, student interest ignites critical thinking through student-initiated questions—a form of “cognitive content engagement” to advance the understanding of content (Kong & Hoare, 2011) and an opportunity to improve students’ English oral skills (Dalton-Puffer, 2007).

However, not every student asked questions in English during class time, which cannot be attributed to only students’ limited English proficiency. For example, Ken, perceiving Prof. Lin’s quick pace of teaching and the need to take notes in class, usually posed questions in Chinese after class. Like Ken, Juhziz, based on his knowledge of self, opted to initiate questions after class as well. “Sometimes I want to pose questions during the class, but I was rather shy about it. So usually I would do so after class,” Juhziz said. The interaction between self-knowledge and students’ perceptions of the legitimacy of posing questions determines how students use the learning opportunities in EMI contexts, as has been suggested by van Lier (2000, 2004a, 2004b, 2007, 2008a, 2008b).

The effect of student interest on learning content via English is not restricted to classroom settings. Outside the classroom, the students with great interest in the subject matter also undertook reading textbooks and other materials online as a means of previewing the material. For example, Juhziz said that he would usually read the assigned materials in advance to facilitate his comprehension of the instructor’s lectures. Claire and Vicky showed even more initiative by searching for related articles on the Internet. They explained that this was an activity not only to secure better performance in class but more importantly to satisfy their personal interests and understand how the abstract concepts discussed in class were realized. Claire, in explaining why she would initiate further reading, said, “I want to see how it [the concept] is realized in real situations, because this makes it easier to memorize the concept...and it’s sort of an activity that I start because I want to keep up with the instructor’s instruction.” Such results underscore the primacy of student interest as a means of facilitating learner autonomy, i.e., students’ being able to take charge of their own learning—an overlooked factor in the previous discussions of learning content via English.

Compared with those with more interest in politics, the students whose reasons for taking the courses were more exploration-oriented and who encountered more problems in learning (Stacey and Mag) perceived and acted mostly on teacher-guided affordances. They received what the instructor offered in in-class activities and seldom initiated other learning

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activities to enhance their learning of discipline-specific content for reasons other than addressing their comprehension difficulties. For example, Stacey and Mag reported that when they perceived comprehension problems, they would ask the instructor questions in Chinese after class. Mag also expressed that she would discuss with peers to check her comprehension and search for related information on Wikipedia before class, which was a learner-initiated affordance she drew on based on her knowledge about self:

It took [me] a lot of time to read textbooks written in English; plus there were so many political jargons which made it even more difficult to understand... and after the mid-term I found I didn't have so much time to read the book, so I just read the translated version of the book and searched keywords [on Wikipedia].

Indeed, learner-initiated affordances alone do not necessarily promise increased exposure to English or benefits in content learning. It is student interest that may generate more beneficial language or content affordances.

The above findings regarding the difference in the extent to which affordances were perceived and acted on as it relates to student interest correspond to Huang's (2009) emphasis on the primacy of affective factors in students' learning of content via English. Among various affective factors, student interest in subject matter is a significant factor in facilitating not only content learning but also learner autonomy and the use of, or exposure to, English.

Limited cultural affordances

Although different types of affordances were detected and used, students cognized limited cultural affordances. As Juhziz commented, "The number of international students is much smaller than that of local students- and ... international students have their own groups." Situated within the school context where local students outnumber international students, student participants might not recognize the advantage of recruiting international students stipulated by the school, let alone act upon it. Such results confirm Dunne's (2009) research that local students might not interact with international students without noticing the worth of doing so.

However, these students perceived different cultural phenomena and perspectives of international students. In reflecting on his observations of teacher-student interaction, Ken said, “I think international students came from different places so they would ask the instructor’s opinion about their own countries.” Under this circumstance, the students recognized, “International students will ask the instructor’s opinion especially when it’s different from theirs. They like to go into whys and wherefore of it. But local students won’t,” and “International students may not concur with instructors so there will be some interaction. But it’s not like they are challenging the instructor’s authority.” When asked about what he thought of the cultural difference, Ken responded positively, “The instructor would ask the one who asked questions to elaborate his or her thought so it will help clarify the statements on both sides.” Through the scaffolding of the instructor, local students’ cross-cultural sensitivity and awareness were cultivated, thereby implying the primacy of teacher support, as indicated in the previous research (Dunne, 2009).

Aside from the cultural perspectives, the student participants also perceived and acted on the teacher-initiated or student-initiated cultural affordances. They thought that Prof. Lin intended to introduce Taiwanese culture to the international students and would invite local students to do so. “If the international students asked questions about Taiwan, the instructor would ask us [local students] to respond first... or he would reply first and ask us if we had other opinions,” explained Ken. When the students accepted the turn, they would try their best to respond to their peers’ questions, often with Prof. Lin’s prompting. Such an interactive environment might not only be created by the instructor because local students would also initiate conversations with international students and vice versa. As Juhziz said, “because international students would chat with you, but it’s not provided by the instructor... so it’s a bonus [to improve listening];” that is, international students became an important mediator for language, content, and cultural learning in these EMI learning environments.

Despite students’ perceptions of the opportunities afforded by international students, most of the interaction was limited to classroom settings. The student participants never mentioned that they would contact international students outside of the class or that such interaction significantly influenced their learning or lives. Nor did they mention that they would start posing “why” questions as their international

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counterparts did. Indeed, these local students recognized cultural differences due to national diversity, but such awareness had limited impact on their behavior or identity. Compared with content and language affordances, their perceptions of cultural affordances were rather limited.

In short, situated in the context where EMI courses are selective, the students with more background knowledge and/or interest in subject matter displayed a tendency to perceive and act on teacher- and student-initiated affordances for the dual purposes of English and content learning, while those with less background knowledge and/or interest in subject matter, perceived and acted on teacher-initiated affordances simply for comprehension of discipline-specific content. Such perceptions and follow-up action are based on students' self-understanding (i.e., their reasons for taking the course, interests and background knowledge, as well as their beliefs about content and English learning), and the availability of such affordances in the environment. Compared with content and language learning, students' perceptions of cross-cultural learning are limited to classroom settings, and most cultural affordances are perceived as by-products of content and language learning.

Learning Experiences in the Immersion Context

*Curriculum profile*³

Unlike courses A and B, a Statistics course (course C) offered in the Department of Politics at a private university (University C) is representative of the EMI context where over 90% of the courses offered on the campus are conducted in English with the primary goal being to enable local students to study abroad in their junior year; that is, they are immersed in English-mediated classroom learning environments, except when taking general courses (e.g., physical education and Chinese). As such, once students choose to study on this campus, they have no choice but to learn almost all subject matter in English. In particular, course C was a compulsory course for freshmen majoring in Politics, and the majority of the students were Taiwanese with a few international students enrolled.

³ See Huang (2014a, 2014b) for further explanations for teacher pedagogy and student reaction.

Although this private university in Taiwan, like those in Costa and Coleman's (2012) study, strictly enforced the English-only policy, Prof. Su, the instructor, did not employ English as the only language for instruction. Due to his concern about the English abilities and lack of background knowledge of first-year students, he switched to Chinese, the L1 of most of the students, whenever he perceived students' comprehension problems. To be more specific, he would clarify the confusing concepts to the international students in English and then in Chinese to the Taiwanese students. Likewise, he would allow questions or responses in Chinese and permit students to submit assignments, quizzes, and exams in Chinese. As a matter of fact, the textbook that Taiwanese students were required to read was a book written in Chinese rather than in English because of Prof. Su's emphasis on comprehension of content not the learning of language⁴. In other words, students in class C were situated in a learning environment that differed quite a lot in the roles English and EMI courses played at the policy-, campus- and classroom-level.

Different from politics that is argumentative in nature, statistics is in itself technical and mathematical in nature and hence Prof. Su's ways to teach statistics also differed from Prof. Lin's ways to teach politics. In teaching statistics, Prof. Su was noted to lecture interactively using Power Point slides and posing questions to the students to check their comprehension. Before the midterm, the focus of Prof. Su's lectures was more about core concepts in the field of statistics and calculations. In the second half of the semester, his focus shifted to the application of SPSS, a computer program for statistical analysis. Prof. Su would give students weekly assignments and discuss the answers to these questions the next week in English with international students and in Chinese with Taiwanese students.

The perceptions of only content affordances

As we have seen in Universities A and B, students' self-knowledge and their perceptions of school and classroom contexts may mediate their learning of content via English. Similarly, these factors come into play in University C as well. Situated in an environment where they were not required to use English in either writing or discussing discipline-

⁴Note that no textbook was required for international students. Instead, supplementary materials in English were provided.

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specific content nor in reading materials and listening to lectures exclusively in English, the students in class C reported only content affordances, i.e., the comprehension of content. Such a classroom, however, was not uncommon on the campus. The students explained, in spite of the English-only school policy, most teachers on campus deemed students' English abilities to be inadequate and thus did not require students to use English as the only language for learning in class. This modification rendered the classroom as hardly an English-only environment at the level of class instruction. As Steffi explained:

I think the instructors here probably understand that we can better express our ideas in Chinese.... [We are not required to write in English for now] because we can't just write in English exclusively like international students because it's not our first language. But if you can write in Chinese that means you understand then at least you achieve the basic requirement set by the instructors, which is comprehension.

The emphasis on learners' inadequate English proficiency, according to students, seemed to compel the instructors to lower their expectations about student performance. Such results, according to Walqui and van Lier (2010), may deprive students of the opportunities to engage in appropriating words or frames of reference to form their own voices in English. Without such cognitively active engagement, the students, unsurprisingly, were unable to relate content learning in English to the advancement of language learning (language affordances), thereby underscoring the significance of instructors' high expectations of academic performance with enhancing students' abilities to perceive-in-action.

Although most instructors lowered their language requirements for students, the freshmen still felt it stressful to take almost every course in English in the first year (cf. Evans & Morrison, 2011a, 2011b; Huang, 2012, 2014b; Naoko & Naeko, 2006). In order to cope with the academic demands in English, including attending classes, submitting assignments, and taking exams, students strategically relied on Chinese and visual aids to enhance their understanding of content. Unlike the students in the selective EMI courses, almost all the students in the immersion context mentioned how Prof. Su's provision of Chinese textbooks and code-switching between the two languages, which was perceived as modified

practices because of students' inadequate English abilities, benefited the local students' comprehension of the discipline-specific content. As Fanny put it, "[Our] comprehension is much higher when the instructor lectures in Chinese than in English." In this respect, Chinese became a primary mediator for the learning of content in English not simply when students' English abilities were perceived as weak but also when students had insufficient time to digest all the material presented in a foreign language.

While most students in class C highly valued Prof. Su's teaching, they perceived affordances concerning comprehension of content rather than critical thinking as indicated in politics courses. This kind of perception may be because statistics and politics differ in the nature of subject knowledge, resulting in the provision of different types of scaffolding (or the availability of affordances). In this respect, these students perceived their understanding was enhanced via the instructor's use of comprehension questions in the interactive lectures. Victoria, an international student who valued this interactive teaching approach, described in the interview how her learning was facilitated by the instructor's interactive lectures. She explained the comprehension check questions posed by the instructor allowed her to examine whether she understood the material and elicited constant explanations from the instructor when necessary. Though responding with an uncertain tone, Lisa, who admitted to not previewing the material, also agreed that the questions posed by the instructor during his interactive lectures afforded her with opportunities "to quickly understand what the relevant concepts are about." Indeed, due to the nature of subject knowledge, comprehension was emphasized more in statistics than in politics, providing different types of affordances in the two courses.

As indicated in the selective EMI courses, students may perceive the same instructional acts differently due to their self-knowledge, the interpretation of the context, and the dynamics between the two. For example, although all the students deemed the PowerPoint slides provided by the instructor as content affordances, these slides were perceived and acted on in dissimilar ways by the students with varying mathematical knowledge. For Victoria, a student who self-identified as weak with numbers, the PowerPoint slides offered the opportunity to preview material before class and served as an aid which made it easier for her to understand the instructor's lectures and take notes in class. For Lisa, a learner who self-identified as good at math, the PowerPoint slides

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were viewed as some sort of panacea that could solve all her comprehension problems or compensate for her occasional lack of attention in class, because, as she said, “You could find all the concepts that the instructor mentioned on the PowerPoint slides.... If you do not pay attention in class, you can still understand with the PowerPoint slides.” While the slides became a content affordance that could facilitate Lisa’s learning and acting on other affordances, in Steffi’s case, they were materials used to remedy her poor comprehension caused by her lack of interest in statistics. As Steffi explained, “I think my problem is I have very little interest in the topics offered by the course, but sadly it’s compulsory.” To address these comprehension problems, Steffi felt the need to initiate other learning activities to draw on the affordances within.

Using learner-initiated affordances to meet the course requirements

Although students in class C could perceive and act on both teacher-guided and learner-initiated affordances, they, unlike those in courses A and B, tended to utilize learner-initiated affordances only to meet the requirements set by the instructor, such as completing homework and taking exams. For Fanny and Victoria, who believed in the value of previewing and generally would do so before class, there were few problems in comprehending the instructor’s lectures, confirming the previous literature that indicates effective reading strategies play a significant role in learning content in English (Evans & Morrison, 2011a, 2011b). Therefore, these students generally could perceive and act on the teacher-guided affordances in the teacher-arranged activities such as interactive lectures. However, to address their difficulties in writing assignments or preparing for exams, they would also initiate activities such as posing questions to the instructor after class and discussing questions about their assignments with peers. These students reported that they did not ask as many questions of the instructor as they did to their peers.

As has been reported in the literature (Evans & Morrison, 2011a, 2011b), peer support plays a significant role in learning content in English; however, it manifests differently according to different students’ needs. Aside from acting on teacher-initiated activities, students may also take initiative by discussing confusing content with peers. For Victoria, peer discussions about the questions she had were activities initiated out of accessibility. “Because I mean it was for example at night

so I couldn't go out and look for the instructor," Victoria explained. But for Fanny, discussions with peers had more distinctive value. Fanny explained that she was an introvert afraid of asking male instructors questions and that "there was a shared language among students which was more comprehensible than the instructor's language;" thus, Fanny perceived the affordances only accessible in peer discussions. When asked about how she solved the problems she encountered, Fanny again said that peers played a significant role, adding that she would form an assignment writing group with peers where they wrote and discussed the assignments together. "You're going to gain something no matter whether it's you teaching others or others teaching you," Fanny said. Indeed, peer support, like any other instructional act, may be perceived and used differently based on students' understanding of the self and the availability of the assistance.

But for Steffi, who had no interest in mathematics and who self-identified as particularly weak with numbers, the activities of preview, review, and peer discussions were means to help her survive in class. Steffi admitted because of her lack of interest, she was easily distracted in class and perceived very few teacher-guided affordances. To compensate for her lack of attention in class, Steffi said she had to "spend more time before and after class." She also encountered difficulties completing her assignments and had to turn to her peers for help. As for completing the assignments, Steffi explained,

I would collaborate with my friend. She's responsible for the calculation part, and I'm in charge of the theory part, that's faster. But still I can't understand the formulas that she writes. She would tell me to simply memorize them and I would say, "all right," and do as what she told me to.

In commenting on the effectiveness of learning, Steffi again emphasized her deficit caused by lack of interest in the topics, saying "The instructor was really good. It's my own problem that I couldn't keep up with the pace."

Yet when Steffi was interested in a particular subject, she would take the initiative in learning. As she explained when trying to learn from an international instructor's course, "I'll preview or review... It's really painstaking because I cannot understand it at all. But spending more time is better than doing nothing... If I'm interested in [a subject], even if it is

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difficult... I would still spend more time on it.” Although the courses taught by international instructors were often perceived as more difficult than those given by local instructors for the former tended to have “strong accents,” “no code-switching to Chinese,” and “no room for negotiating grades,” those who displayed interest in subjects would demonstrate higher levels of learner agency. Indeed, interest in the subject matter is a primary factor in content learning via English.

The perception of limited cultural affordances

Like the students in other classes, most students in class C reported limited or even no interaction between the local and international students inside the classroom or on campus, and hence cultural affordances were limited unless local students initiated conversations with international students. Most of the time the international students sat in the back of the class, used English materials rather than Chinese ones, and had separate conferences with the instructor. As such, no teacher-initiated cultural learning was perceived while students were learning statistics, suggesting the primacy of teacher intervention and proximity, as indicated in Dunne’s (2009) study. Such restricted perceptions may also be due to the nature of subject matter; for many, statistics is considered a course concerned with numbers not cultures.

Even so, the students in class C recognized the cultural differences not only between local and international students but also between local and international instructors. They observed that international students were more able and willing to speak in public than local students since international students have been educated to do so from youth. They were also aware that international instructors differed from local instructors in their ways of talking, thinking, and teaching; that is, international instructors focused more on “cultivating thoughts,” while local instructors focused more on “comprehension of content.”

The few local students who initiated interacting with international students perceived more cultural affordances, most of which were restricted to everyday conversations instead of academic discussions. For example, Fanny expressed, “While talking with international students, [I found] I tend to think in a Chinese way. And they [international students] don’t care much about grammar or sentence structure. What they care is whether or not you understand.” The local and international student interaction enabled Fanny to understand the primacy of English as a lingua franca and its corresponding cultures (cf. Smit, 2010). Yet no

discussions about statistics between international and local students were reported, unless those students were already good friends before the class. Indeed, the presence of international students does not guarantee intercultural contact between local and international students (Dunne, 2009). And friendship formation strategies may become an important factor in the perception of cultural affordances.

In short, situated in the context where English was used in almost all subjects, both students and instructors perceived the pressure to learn content via English, especially for freshmen with insufficient background knowledge and inadequate academic adjustment. Also, the compulsory course restricted the freedom of students to choose courses they were interested in. As such, both the instructor and students might lower their expectations and rely on Chinese. Moreover, students perceived and acted on only content affordances—comprehension of content—and initiated further action only to meet course requirements. Among these students, those with good study habits and interest in the subject matter tended to have fewer comprehension problems and displayed a higher level of agency. Students' perceptions and follow-up actions are based on the interaction between the availability of such affordances in the environment and the self-knowledge (i.e., their interests, mathematical and English abilities, and beliefs about content learning). Also, students perceived limited cultural affordances because of proximity, friendship formation, the nature of subject matter, and the lack of interaction initiated by the instructor or the student.

IMPLICATIONS

In examining learning, teaching, and policies in English-taught programs, researchers have tended to focus on the quantitative exploration of language-related challenges NNES students encountered in a particular type of EMI context without taking learner agency into consideration. This qualitative study, however, based on the students' emic perspectives, presents a more complex picture of what and how students learn content in English across different curriculum types: Not all of the NNES students had comprehension problems, not all such problems were language-related, not all the interaction between international and local students was guaranteed, and not all instructional acts were perceived as having the same effects on students. Instead, individual factors, contextual factors, and the interaction between the

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two mediate students' learning of content. To be more specific, when affordance perception is facilitated and students will have a higher level of agency and cognitive engagement, better performance may result.

First, what affordances NNES students perceive and how they act on them are informed by a combination of individual factors, such as their interests, habits, and beliefs about their learning, educational levels, and background knowledge of the discipline-specific content (Byun et al., 2011; Chang, 2010; Evans & Morrison, 2011a, 2011b; Huang, 2009, 2012; Wu, 2006). For example, the freshmen in the immersion context of EMI generally reported more problems and fewer affordances than non-freshman students in the selective EMI courses because it is more cognitively and affectively demanding for the former to simultaneously engage in both academic and language adjustment. Those with more background knowledge in the subject matter tended to report more content affordances than those with less background knowledge. In particular, among the students with more background knowledge, those in the context of selective EMI courses, regardless of their English proficiency, tended to perceive more language affordances. Such results caution that English proficiency does not determine affordance-perception abilities. Indeed, individual factors may influence the perceived availability of language or content affordances, and hence future EMI should take these factors into consideration.

Among these individual factors, interest or lack of interest is one of the most often given reasons by the students to explain the quality and quantity of investment they make in particular courses, thereby suggesting different levels of agency. Such results not only corroborate Huang's (2009) emphasis on affective factors in EMI, but more importantly, they depict the complexity of student learning. Students who claim interest as one of the reasons for taking the EMI courses generally exhibit more initiative to invest in the courses and to perceive and act on available affordances. Claire, Ken, and Juhziz, politics majors who took the course because of their interest in the topic, generally exhibited more initiative in detecting and drawing on both language and content affordances to advance their content learning in English. The initiative to invest in the courses was also evident in the non-politics majors such as Vicky and Mag, who claimed interest as their reasons for taking the course. In spite of their limited background knowledge, they employed the affordances they perceived and strove to address their difficulties, and even, in Vicky's case, undertook further reading to

enhance her learning. Nevertheless, students like Lisa, Victoria, and Steffi who took the course not of their own volition displayed less interest and initiative in learning and only acted on the affordances they detected to fulfill the requirements set by the instructor. In short, among the various individual factors, the interest of students, a non-language factor, serves as a motivator for cognitive engagement in learning content in English.

Second, learners' perceptions of and responses to the affordances mediate and are mediated by school- and classroom-level contexts. At the school level, although all the students recognize the emphasis on content and cultural learning, the ways they perceive and act on these available affordances differ in the varying EMI contexts. The students enrolled in courses A and B took the courses of their own volition and exhibited more initiative. They detected the affordances available in the contexts, i.e., teacher-guided or learner-initiated questions, and responded to them to address their weaknesses in order to enhance their learning of discipline-specific content. However, those students in class C were required to take every course in English, leaving little room for those with limited interest in the topics offered by the course and little time for digesting the content taught in English. Being unable to manage all the materials and exams in English, these students displayed less initiative in learning and learned simply to meet the requirements rather than to expand their understanding of content. In so doing, another non-language factor—freedom to choose the subject matter—should be emphasized in designing EMI curriculum.

At the classroom level, the students in the two kinds of classroom contexts detect dissimilar types of affordances. In classes A and B where students were perceived as proficient and required to use English receptively and productively in learning politics, students were more able to perceive and respond to both content and language affordances with varying gains in content and language learning. In contrast, when understanding statistics was viewed as comprehending technical terms, students were perceived as having inadequate background knowledge in class C and required to listen to the instructor's lectures with Chinese scaffolding. It comes with little surprise that they could only detect and draw on affordances for content comprehension; that is, although both instructors emphasized the significance of content- over language-learning, students were not necessarily able to perceive language affordances or cognitively engage in content affordances when no such

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affordances were provided or when only comprehension was emphasized. Although the emphasis of comprehension may be due to the nature of subject matter, many scholars have cautioned about the negative influence of restricting EMI to the teaching of technical terms (Tan, 2011; Tan & Lan, 2011). As such, one way to enhance content learning in English is to cognitively engage students by balancing different types of questions and activities used by the instructor.

The interaction between the individual and contextual factors may lead to a contrasting pattern of learning: more affordances are perceived and acted on in a curricular design where students can self-select courses based on their interests, are perceived as proficient and held accountable for their own learning, and are engaged in more cognitively demanding tasks. It is thus not surprising to observe more satisfaction and agency in such a design. This argument does not imply that the selective EMI course design is better than an immersion design, since in the latter design, Steffi put more effort in courses where she displayed more interest, instructors held higher expectations, and flexibility in selection of courses was allowed. However, it does suggest the significance of the dynamics between the individual and the context in learning content via English, and in turn, students can engage in enhanced understanding when a learner-centered environment is provided.

Yet such an interaction does not make any difference in terms of cultural affordances perceived and acted on by the students in the two types of EMI contexts; the presence of international students alone cannot sufficiently motivate local students to interact with their international counterparts. With local students and instructors outnumbering international students and instructors, students perceived cultural affordances restricted to the cultural differences and perspectives brought by international students within the classroom settings and/or the use of everyday conversations. Limited academic discussions were found outside of the classrooms, and limited change in thinking, behavior, or identity was discovered. Such results, according to Dunne (2009), may be due to (a) no or few teacher- or student-initiated action or activities, (b) restricted perceptions of the utility of interacting with international students, (c) the proximity of international and local students, and (d) limited friendship formation strategies. In this respect, instructors are encouraged to organize more activities that promote cross-cultural interaction both in and beyond the classroom settings or to scaffold students to recognize that cross-cultural interaction is worth the effort.

The results of limited cultural affordances in this study not only point out a pedagogical direction for more culturally responsive teaching but also contribute to the international literature in the context of Taiwan by using a new theoretical framework that emphasizes the primacy of learner agency in cross-cultural learning.

With these central findings, this article thus argues the importance for researchers and instructors to note the primacy of learner agency in researching or adopting EMI, or to recognize the significance of the provision of cognitively engaged and learner-centered environments. Future researchers might depict the learning paths the NNES students undertake, explore when and how learner agency matters in other types of EMI contexts, and examine the relationship between agency and performance/competence by using qualitative research methodology. In future research, systemic comparison can be made between students in the same educational level, between the same subject matter in two programs, or between two subjects in the same program in order to better understand the role of educational levels or the nature of subject knowledge. The role of the L1, English proficiency, or background knowledge in language affordances, and the ways to increase the perceptions and use of cultural affordances can also be explored in future studies of EMI. Studies in these directions, we believe, benefit future design of cognitively engaged and learner-centered environments for better student performance in EMI contexts.

To increase learner agency, it is pedagogically significant for instructors to recognize students' subjective needs (e.g., interests, goals, and beliefs), to offer them the power of choice (Stevick, 1980), to display high expectations about language and content requirements (cf. Walqui & van Lier, 2010), and to provide activities or tasks that promote cross-cultural interactions in and beyond the classroom settings. When new programs with all the courses taught in English are initiated, special attention should be paid to making language, cultural, and content resources and activities accessible to students.

CONCLUSION

Although it is pedagogically significant to have a quantitative exploration of language-related challenges NNES students face in EMI in higher education, such analyses may neglect how individuals attach different meanings to the same act and thus obscure the complexity of

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learning content via a foreign language. Honoring the variety of learner experiences, this paper explores learner agency with a particular focus on the affordances NNES students adopt and act on across individuals and EMI contexts and argues for the primacy of interests, educational levels, and background knowledge in individual factors, the provision of sufficient English and cultural affordances in the contextual factors, and the dynamics between the two. To avoid reductionism, we do not claim the cases presented in this paper to be universal, but instead they are illustrative of the continuum of learner agency displayed across individuals and types of EMI contexts. Neither do we assume learner agency as equivalent to academic performance or competence, nor neglect the significance of language-related challenges. Instead, we believe learner agency—the extent to which individuals “engage” in meaningful activities—reflects a core principle of effective (language) learning and reveals opportunities for individuals to succeed. In this respect, this study functions as a springboard for future research on learner agency in EMI in higher education.

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AFFORDANCE OF ENGLISH-MEDIUM INSTRUCTION CONTEXTS

ACKNOWLEDGEMENT

This study was supported by the Ministry of Science and Technology (99-2410-H-004-183-MY2).

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PUBLISHING RECORD

Manuscript received: February 5, 2014; Revision received: May 24, 2014; Manuscript accepted: June 25, 2014

台灣英語授課環境之可供性

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英語授課在英語非為母語環境中的增加，已促使學者紛紛研究學生在此環境所面臨的挑戰。然而，前述研究大多採取鎖定單一機構或課程的量化研究，雖強調語言相關的困難，卻忽視英語非為母語的學生以英語學習專業的複雜性。透過 van Lier (2000, 2004a, 2004b, 2007, 2008b) 語言教育生態學中「可供性」的概念，本質化個案研究探討兩種台灣英語授課環境提供學生學習機會：選擇英語授課修課模式與沉浸式課程模式。研究顯示：雖然學生鮮少了解環境賦予的文化可供性，但他們更常在表現學科興趣、教師的高度期許、與修課彈性上，覺察專業內容與語言之可供性。因此，本文強調個人因素(興趣、修課年級、與背景知識)、情境因素(提供足夠的英語與文化可供性)，及兩因素間相互作用，對學生以英語學習專業的重要性。

關鍵詞：高等教育國際化、英語授課、可供性、學習者